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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/722,931

11/25/2003

Robert Hartmann

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09/20/2006

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EXAMINER

LAU, HOI CHING

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/722,931	Applicant(s) HARTMANN ET AL.	
	Examiner Hoi C. Lau	Art Unit 2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application: |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/16/06</u> . | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1-12 have been examined.

Election/Restrictions

2. Applicant's election with traverse of claims 1-12 in the reply filed on November 25, 2003 is acknowledged. The traversal is on the ground(s) that the inventions are not distinct. This is not found persuasive because the specification discloses alternative embodiment having inductive and coupling factor which indicates distinct species of the claimed invention for sensing of seat buckle: Claims 1-12 are directed to buckle status detector using inductance change detection (corresponding to Fig. 5) and claims 13-22 are directed to a buckle status detector using coupling factor detection (corresponding to Fig. 6). See page 3, paragraphs 44 —45 and page 4, paragraph 73 and Office Action filed on June 15, 2005. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claim 1-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steffens, Jr. (U.S. 6,025,783) in view of Teodorescu (U.S. 5,986,549).

Regarding **Claim 1**, Steffens, Jr. teaches a system comprises a sensor that interrogates the condition of the seat belt buckle by realizing a change inductance base upon a position of an inductance-altering activating component (tongue 114). The sensing elements are combining the remote switch 28, 128 (Fig. 1) at remote site 14 in response of the change of inductance with the tag circuit 32 (Fig. 1). The tag circuit includes an antenna for transmitting a tag signal indicative of the switch state, which corresponds to the output of the switch mechanism (column 2, lines 42-61 and column 4, lines 5-26).

The corresponding state A or B of the remote site is in responded upon the change of inductance at the Hall effect sensor 130 (figure 3-4, inductance detection by change of magnetic field) (column 5, lines 51-column 25). The Hall effect device 130 provides a different output to the tag circuit 136 depending on the buckle condition (inductance change) (column 4, lines 15-26). The inductor 29 shifts the frequency of detection signal to tag circuit upon change of inductance at the sensor 28, 128, 130 at remote site 14 by switching between State A or B (figure 4 in view of figure 1).

It fails to show the sensing in change of inductance based upon a position of an inductance-alerting activating component without using a magnet.

Teodorescu teaches the detection of object based upon the change of inductance with respect to its capacitance which is sensitive to a proximal

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conductive, nonconductive, magnetic or nonmagnetic object without using a magnet (figure 1 and column 1, lines 55-60 and column 2, lines 1-12).

It would have been obvious to one of ordinary skill in the art to combine the inductance sensing to define the close proximity of object such as conductive material (seat buckle tongue as taught by Steffens) for the determination of the condition and position without using a magnet as taught by Teodorescu with the detection of the condition of seat buckle sensor taught by Steffens because it would eliminate the use of magnet to create the hall effect for a detection in term of reduce the manufacture cost and avoid the limitation of parts. The reference of Teodorescu is only relied on the teaching of using conductive coil to construct a sensing element to detect the change of inductance when define the close proximity of conductive material (tongue) without using a magnet while it does not specific the environment condition. The output to the sensing element (figure 2) would be functional equivalent as the output at the tag circuit of Steffens, Jr to recognize the detection signal. Further, the Hall effect device 130 of Steffens, Jr. for detecting magnetic flux inherently comprises a conductor loop for intercepting magnetic flux line. It would have been obvious to one of ordinary skill in the art to use a multi-turn construction for such a planar conductive coil loop for optimized flux detection for a given loop dimension.

Official Note is taken that the dc magnet as shown generates magnetic field energy by Steffens, Jr. (U.S. 6,025,783) or by using current to generate the field energy and for detection as the alternative which shown by Herman et al. (U.S. 5,406,262) or Teodorescu (U.S. 5,986,549).

As to **Claim 2**, Steffens's system is arranged an inductor 29 which is a multi-turn conductor loop (Fig. 1 and column 2, lines 15-18).

As to **Claim 4**, Steffens shows the conductor loop is planar (Figure 1).

As to **Claims 5 and 7**, Steffens system includes an oscillation circuit with a micro-controller 18 which able to evaluate the input signal (Figure 1 and column 1, line 58-62 and column 4, lines 27-35).

As to **Claim 6**, it would have been obvious to one of ordinary skill in the art Steffens has a differentiation circuit or else the system would not operate (figure 1) .

As to **Claim 9**, Steffens shows that the sensor is part of a voltage transmission circuit (Fig. 1 and 2).

As to **Claim 10**, It would have been obvious to one of ordinary skill in the art Steffens' system includes a switching controller for recognition of a voltage or else the system would not able to detect the voltage pass through the system (figure 1 and 2).

As to **Claim 3**, Steffens' system meets all the limitation of claims except it fails to show the conductor loop is applied on a printed circuit.

Teodorescu's sensor teaches a sensor includes a planar spiral winding formed as a printed circuit (Fig. 3 and column 4, lines 46-62).

It would have been obvious to one of ordinary skill in the art at the time the invention to integrate the conductor loop on a printed circuit because the conductor loop would be easier to associate with other electronic component or circuitry on a circuit board within a compact space.

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4. **Claims 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Steffens, Jr. (U.S. 6,025,783) in view of Teodorescu (U.S. 5,986,549), in further view of Todd (U.S. 5,907,892).

The combination meets all the limitation of claims except it fails to show a leaf spring manufactured from a material selected from the group consisting of diamagnetic, paramagnetic and ferromagnetic.

Todd discloses a system teaches a leaf spring manufactured from metal (column 3, lines 64-67 and column 4, lines 1-4).

It would have been obvious to one of ordinary skill in the art at the time metal is a well-known type of magnetic material.

5. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Todd (5,907,892) in view of Steffens, Jr. (U.S. 6,025,783), in further view of Teodorescu (U.S. 5,986,549).

Regarding **Claim 11**, Todd's system teaches the seat buckle comprises:

A seat belt buckle carrier; a seat belt tongue carrier; an ejector; a locking component (see abstract and Fig. 1 and 2).

However, it fails to shows a seat buckle include a device for recognizing the locked condition of a seat belt buckle comprising a sensor that directly interrogates the condition of the seat belt buckle by a change in inductance.

Steffens's device shows a sensor is associated with the seat belt buckle (see claim 1 for rejection).

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It would have been obvious to one of ordinary skill in the art at the time to integrate a sensor with the seat buckle because it would provide the lock/unlock condition of the seat buckle for both driver and passenger for safety purpose.

The combination still fails to show the sensing in change of inductance based upon a position of an inductance-alerting activating component without using a magnet.

Teodorescu teaches the detection of object based upon the change of inductance with respect to its capacitance which is sensitive to a proximal conductive, nonconductive, magnetic or nonmagnetic object (figure 1 and column 1, lines 55-60 and column 2, lines 1-12).

It would have been obvious to one of ordinary skill in the art to combine the inductance sensing to define the close proximity of object such as conductive material (seat buckle tongue as taught by Steffens) for the determination of the condition and position taught by Teodorescu with the detection of the condition of seat buckle sensor taught by Steffens because it would eliminate the use of magnet to create the hall effect for a detection in term of reduce the manufacture cost and avoid the limitation of parts.

6. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over Todd (5,907,892) in view of Steffens, Jr. (U.S. 6,025,783), in further view of Teodorescu (U.S. 5,986,549) and Husby et al. (U.S. 5,960,523).

The combination meets all the limitation of claim except it fails to show the material of seat buckle tongue.

Husby's device teaches the buckle tongue is using ferromagnetic material (column 6, lines 20-23).

One of ordinary skill in the art could manufacture the buckle tongue with any kind of metal to satisfy the magnetic and long lasting purpose.

Conclusion

7. This is a continuation of applicant's earlier Application No. 10/722,931. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

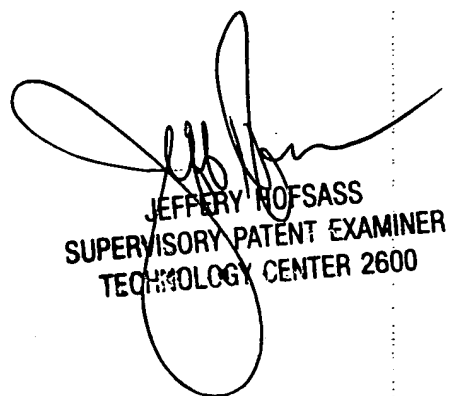
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoi C. Lau whose telephone number is (571)272-8547. The examiner can normally be reached on M- F 8:30am - 5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on (571)272-2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hoi C Lau
Art Unit 2612



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